



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,662	10/24/2003	Sung-Su Jung	8734.246.00 - US	6340
30827 7590 12/04/2007 MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			EXAMINER LIN, JAMES	
			ART UNIT 1792	PAPER NUMBER
			MAIL DATE 12/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/691,662	Applicant(s) JUNG, SUNG-SU	
	Examiner Jimmy Lin	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/14/2007 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 10-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no support for "forming a first plurality of seal patterns along outer edges of a first plurality of image display parts by using the syringes" (claim 11) because the specification does not provide support for the use of any syringe to form the first seal patterns. For example, the syringes on the second table do not form any patterns on the substrate while the substrate is loaded on the first table (see Figs. 6A-6G). The same analogy can be applied to claims 13 and 15.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 depends from claim 11, which requires the dispensing of a sealant material. However, claim 12 requires a broader range of dispensing material that includes materials other than sealant materials. Thus, it is unclear as to the metes and bounds of claim 12.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. (U.S. Publication No. 2001/0013920), in view of Komine et al. (U.S. Patent No. 5,292,368), Iwane (JP 11-014953), and Hachiman et al. (JP 2001-356353, as provided by the Applicant).

Hashimoto teaches a method of making a liquid crystal display panel (abstract). A substrate 21a is placed on a table 31, and liquid crystal is injected onto the substrate through a nozzle of a syringe ([0050]; Fig. 14). The syringe can be attached to a robot arm [0153].

Hashimoto does not explicitly teach that sealant can be dispensed using a syringe. However, Hashimoto does teach that the sealant can be dispensed by any sort of method wherein the sealant is injected on the substrate through a nozzle [0046]. Hashimoto also teaches that the syringe can be used to inject material onto the substrate through the nozzle of the syringe [0050]. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Accordingly, it would have been obvious to one of ordinary skill in the art at the time of invention to have used the syringe of Hashimoto to inject the sealant onto the substrate with a reasonable expectation of success because Hashimoto teaches that the nozzle of the syringe is suitable for injecting a material onto an LCD substrate.

Hashimoto does not explicitly teach independently driving the first table along a convey path of the substrate. However, Hachiman teaches a method of depositing materials from a nozzle onto an LCD substrate while moving the table in the XY-direction [0012]-[0014]. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have deposited the materials onto an LCD substrate by moving the table as opposed to moving the nozzle as taught in Hashimoto with a reasonable expectation of success because Hachiman teaches that such a method is operable for depositing material from a nozzle onto an LCD substrate. Because the table is independently moved, the substrate is driven along the convey path of the substrate. It should be noted that claims do not require any particular convey path.

Hashimoto does not explicitly teach loading the substrate onto a second table, but does teach the need to inject liquid crystal onto the display area. The liquid crystal can be injected through a nozzle of a syringe ([0050]; Fig. 14). It would have been obvious to one of ordinary skill in the art at the time of invention to have used the above-discussed configuration of opposing robot arms in the dispensing of the liquid crystals because the modification would have yielded nothing more than predictable results to one of ordinary skill in the art. Additionally, it would have been obvious to one of ordinary skill in the art at the time of invention to have dispensed the liquid crystals on the second table having a set of syringes different from that of the first table with a reasonable expectation of success in order to have reduced cross-contamination of the sealant and the liquid crystals and to have increased productivity by eliminating the step of changing out the dispensing material in the syringes of the first table. The independent driving of the second table is obvious over Hachiman, as discussed above.

Each of the plurality of image display parts is interpreted to be any two of the six display parts of Iwane. Claim 13 is currently open to forming the first, second, and third plurality of seal patterns on the first table because the claim is not limited to any order of forming the patterns and loading of the substrate onto the first, second, and third tables and because the claim does not require the patterns to be formed on any particular table. Additionally, the requirement of forming the first, second, and third plurality of seal patterns using "the syringes" is not limited to

Hashimoto does not explicitly teach a plurality of robot arms having syringes and arranging the plurality of robot arms on opposing sides of the table. However, Komine teaches a method of applying a coating onto a display device. The coating is applied using a plurality of robot arms arranged on opposing sides of the table (abstract; Figs. 1-2). It would have been well within the capabilities of one of ordinary skill in the art to recognize that more than one dispenser would have improved productivity over the use of a single dispenser. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have applied this known method of enhancement (i.e., having more than one robot arm arranged on opposing sides of the table) to the dispensing method of Hashimoto with predictable results. One would have been motivated to do so in order to have increased productivity and reduce production costs.

Hashimoto and Komine do not explicitly teach that at least two robot arms are arranged at each opposing side of the table. However, Iwane teaches that producing two or more display areas on a single LCD substrate can increase productivity [0005]. Figs. 1, 2, and 4 explicitly exemplify six display areas on a single substrate. One of ordinary skill in the art would have recognized that having more robot arms, thereby having more dispensing syringes, would have increased the rate of production. In the case of substrate of Iwane, having a total of six robot arms (i.e., one for each display part) would have been an obvious modification and to have arranged them on opposite sides of the table would have been obvious over Komine. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a substrate having a plurality of display image parts in order to have increase productivity. Additionally it would have been obvious to one of ordinary skill in the art at the time of invention to have arranged three robot arms on opposing sides of the table of Hashimoto with a reasonable expectation of success. One would have been motivated to do so in order to have provided a robot arm for each of the image display parts of Iwane to thereby further increase productivity and reduce the overall production costs.

Furthermore, the mere duplication of parts has no patentable significance unless a new and unexpected result is produced (See MPEP 2144.04.VI.B.), thus rendering a plurality of robot arms having syringes as an obvious modification over Hashimoto.

using all the syringes during the formation of the seal patterns. For example, the syringes on the second table are not necessarily required to form seal patterns while the substrate is loaded on the first table.

8. Claims 10-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto '920 in view of Komine '368, Iwane '953, and Hachiman '353 as applied to claim 13 above, and further in view of Hashimoto et al. (U.S. Publication No. 2003/0083203).

Hashimoto '920, Komine, Iwane, and Hachiman are discussed above, but do not explicitly teach loading the substrate onto a third table or forming a plurality of silver dots at the outer edges of the image display parts using the syringes. However, Hashimoto '203 teaches that conductive fine particles, such as silver, can be dropped onto an LCD substrate from a nozzle [0102]-[0104], wherein the silver is dropped in the form of dots at the outer edges of the image display to prevent breaks and short circuits ([0191]-[0195]; Fig. 8). Hashimoto '920 teaches that materials can be deposited onto an LCD substrate by dropping the material through the nozzle of a syringe.

It would have been obvious to one of ordinary skill in the art at the time of invention to have connected the upper and lower substrates of Hashimoto '920 using the silver dots of Hashimoto '203 in order to have prevented breaks and short circuits. In addition, it would have been obvious to one of ordinary skill in the art at the time of invention to have dropped the silver dots onto the LCD substrate using the above-discussed configuration of opposing robot arms because the modification would have yielded nothing more than predictable results. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of invention to have formed the silver dots on a third table with a third set of syringes different from that of the first and second tables with a reasonable expectation of success in order to have reduced cross-contamination and to have increased productivity by eliminating the step of changing out the dispensing material in the syringes of the first and second tables.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto '920 in view of Komine '368, Iwane '953, and Hachiman '353 as applied to claim 13 above, and further in view of Yamamoto et al. (JP 61-055625, as provided by the Applicant).

Art Unit: 1792

Hashimoto, Komine, Iwane, and Hachiman are discussed above, but do not explicitly teach that the first plurality of image display parts each have a first size and the second plurality of image display parts each have a second size different from the first size. However, Yamamoto teaches that LCD substrates can have image display parts of different sizes (Figs. 1-2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have the first plurality of image display parts each having a first size different from a second size of the second plurality of image display parts on the substrate of Hashimoto and Iwane with a reasonable expectation of success because the modification would not have changed the function of the LCD substrate and would have yielded nothing more than predictable results to one of ordinary skill.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 10-15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 16-25 of copending Application No. 10/825,362 in view of Komine '368, and Ogino et al. (JP 2001-330840, as provided by the Applicant).

The present claims are merely different permutations and combinations of the claims of '362. Additionally, '362 does not claim that A) the sealant is applied around the display parts, B) liquid crystal can be dispensed from the nozzles of the syringes, C) the plurality of dispensers are arranged on opposing sides of the tables, and D) the substrate can be moved to different tables. However, Ogino teaches that A) the sealant can be applied around first and second image display parts (Fig. 6) for an LCD element in order to improve the display quality of the LCD (abstract) and B) liquid crystal can be applied by dripping. The syringe/nozzle setup of '362 is suitable for applying material by dripping onto a substrate. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have dripped liquid crystal onto the LCD substrate of '362 because Ogino teaches that such a method is suitable for applying liquid crystals onto a substrate. In addition, it would have been obvious to one of ordinary skill in the art at the time of invention to have applied the sealant around the first and second image display parts in order to provide a seal around the liquid crystals.

'362 and Ogino do not require that C) the plurality of dispensers are arranged on opposing sides of the table. However, such is obvious over Komine for substantially the same reasons as discussed above.

'362 and Ogino do not teach that D) the substrate is transferred to different tables. However, it would have been obvious to one of ordinary skill in the art at the time of invention to have dispensed each of the sealant, liquid crystal, and silver dots on first, second, and third tables having a first, second, and third set of syringes for substantially the same reasons as discussed above.

This is a provisional obviousness-type double patenting rejection.

Response to Arguments

12. Applicant's arguments filed 8/16/2007 have been fully considered but they are not persuasive.

Applicant argues that the cited references do not teach "independently driving the first, second, and third tables along a convey path of the substrate". However, Hachiman teaches that it was well known in the art to move the table while dispensing a material onto the substrate. Because the claim does not require any particular convey path of the substrate, any driving of the substrate would necessarily be part of the convey path of the substrate. The rejections have been modified to incorporate the teachings of Hachiman in order to account for the claim amendments.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Song (U.S. Patent 6,252,643) teaches connecting upper and lower LCD substrates using silver dots. Hayashi et al. (U.S. Patent 4,869,935) teaches the use of a plurality of robotic arms arranged on opposing sides.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Application/Control Number: 10/691,662

Page 10

Art Unit: 1792

JL

JL



TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER